

REMARKS

Claims 1-22 are pending in the application. Claims 8-12 are withdrawn from consideration. Claims 1-7 and 13-22 are rejected. Claims 1, 6, 13, 14, 17 and 22 are amended. Claim 5 is cancelled. No new matter is added. Applicants request reconsideration and allowance of the claims in light of the above amendments and following remarks.

Claim Rejections

Claims 1-4 and 13-22 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent Application Publication No. 2003/0168725 issued to Warner, et al. ("Warner").

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication No. 2003/0168725 issued to Warner in view of U.S. Publication No. 2002/0044423 issued to Primavera, et al. ("Primavera").

Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication No. 2003/0168725 issued to Warner in view of Primavera and further in view of U.S. Patent No. 6,576,493 issued to Lin, et al. ("Lin").

Applicants' Response to Claim Rejections

Claim 1 is amended to incorporate the limitation of cancelled claim 5, further defining a first circuit substrate of a lower package of a ball grid array package stack comprising first ball pads formed in said first portion to receive said external connection terminals, second ball pads formed in the third portion to receive the interconnection terminals, and connection lines connecting the first and the second ball pads. Support for the amendment is found in the original application, among other places, on page 5, lines 4-11 and in FIG. 4.

None of the prior art, alone or in combination, discloses all of the elements in amended claim 1. In particular, Warner, alone or in combination with Primavera, does not disclose the substrate having the connection lines connecting the first and second ball pads in amended claim 1. Contrary to the Examiner's assertions, Primavera does not disclose connection lines 44 connecting the first 24 and the second ball pads 34. Rather, Primavera discloses a plurality of conductors 44 connecting the chip contact pads 24 to the assembly contact pads 34. See Primavera, para. [0042]; FIGS. 3 and 4.

Accordingly, claim 1 as amended hereby is allowable over the prior art. Claims 2-4, dependent therefrom, also are allowable because they depend from an allowable claim and recite further distinguishing limitations. Thus, withdrawal of the rejections is respectfully requested.

Claim 6 is amended to depend from amended claim 1. Claim 7 remains in its original form but now depends upon amended claim 6. Claims 6 and 7 also are allowable because they depend from an allowable claim and recite further distinguishing limitations. As discussed above, Warner and Primavera fail to disclose each and every element of amended independent claim 1. Thus, a combination of Warner in view of Primavera in view of Lin continues to fail to disclose each and every element of amended independent claim 1 and, thus, fails to disclose each and every element of dependent claims 6 and 7. Thus, withdrawal of the rejections is respectfully requested.

Claim 13 is amended to further define the folded circuit substrate comprising first ball pads in said first portion of said folded circuit substrate to be connected to said first array of connection balls, second ball pads in said second portion of said folded circuit substrate to be connected to said second array of connection balls, and connection lines connecting said first and second ball pads. Support for the amendment is found in the original application, among other places, on page 5, lines 4-11 and in FIG. 4.

Warner does not disclose all of the elements in amended claim 13. Therefore, the rejection is unsupported and withdrawal of the rejection is respectfully requested.

Claim 14 is amended to further define the circuit substrate comprising first ball pads in said first substrate portion to be connected to said first connection balls, second ball pads in said third substrate portion to be connected to said second connection balls, and connection lines connecting said first and second ball pads. Support for the amendment is found in the original application, among other places, on page 5, lines 4-11 and in FIG. 4.

Warner does not disclose all of the elements in amended claim 14. Therefore, the rejection is unsupported and withdrawal of the rejection is respectfully requested.

Claims 15-21, dependent on amended claim 14, also are allowable because they depend from an allowable claim and recite further distinguishing limitations. Thus, withdrawal of the rejections is respectfully requested.

Claim 22 is amended to further define folded circuit substrates comprising first ball pads in its first portion, second ball pads in its second portion, and connection lines connecting said first and second ball pads. Support for the amendment is found in the original application, among other places, on page 5, lines 4-11 and in FIG. 4.

Warner does not disclose all of the elements in amended claim 22. Therefore, the rejection is unsupported and withdrawal of the rejection is respectfully requested.

CONCLUSION

For the foregoing reasons, reconsideration and allowance of claims 1-4, 6, 7 and 13-22 of the application as amended is solicited. The Examiner is encouraged to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

Respectfully submitted,

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Limited Recognition Under 37 CFR § 10.9(b)

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